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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,664	11/24/2003	Bertrand Haas	F-713	6208

7590 10/10/2007

Pitney Bowes Inc.
Intellectual Property and Technology Law Dept.
35 Waterview Drive
P.O. Box 3000
Shelton, CT 06484

EXAMINER	
WORKU, NEGUSSIE	

ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,664	HAAS ET AL.	
	Examiner	Art Unit	
	Negussie Worku	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/24/07* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Attachment*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 through 21 are pending in the application, and claims 1, 11, 18 are independent, of which claims 2-10, 12-17 and 19-24 are dependent.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 11/24/03 has been reviewed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Echizen et al., (USP 6728408) in view of Braudaway et al., (USP 5,925,892).

With respect to claims 1, Echizen et al., teaches a method of watermarking an image to facilitate detection of copying of the image, (as shown in fig 1) the method

comprising: providing image data that represents an image, (image of fig 1, provides block image data divided from image of fig 1), the image data comprising pixel data that represents respective gray-scale values of pixels of the image (image of pixels block (k x n, pixels represent color (RGB) including gray scale, col.4, lines 49-55); forming a plurality of data blocks from the image data, each data block consisting of pixel data which corresponds to a respective region of the image (as shown in image 1 of fig 1, plurality of data blocks [block interval] as seen fig 1, col.4, lines 49-55); determining for each of the data blocks an average value of the pixel data in the data block (as shown in step 203 of fig 2, a determination has been obtained for all the block patterns of 64 types, col.4, lines 46-50); determining for each of the data blocks (data block shown in fig 1) a target for the average value of the pixel data in the data block (change of sum of pixel values col.4, lines 43-52).

Echizen (408) does not expressly disclose adjusting respective values of at least some of the pixel data in each of at least some of the data blocks to shift the average value of the pixel data in the respective data block toward the target for the respective data block.

Braudaway et al., in the same area of protecting image with an image watermark 9as shown in fig 1, teaches disclose adjusting respective values of at least some of the pixel data in each of at least some of the data blocks to shift the average value of the pixel data in the respective data block toward the target for the respective data block, (computer of fig 1, includes a number of soft ware modules 112 that perform image

processing such as scaling and enhancement of the image data provided by scanner 100, col.6, lines 25-31).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Braudaway (892), to include: adjusting respective values of at least some of the pixel data in each of at least some of the data blocks to shift the average value of the pixel data in the respective data block toward the target for the respective data block.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging device of Echizen et al., by the teaching of Braudaway et al., for the purpose of obtaining a perfect final image, for all the prints of different color to be exactly superimpose.

With respect to claims 2, Echizen et al., teaches the method, (fig 1) wherein the respective target for each data block (data block of fig 4A) is determined based at least in part on a value of a message bit that corresponds to the respective data block (see description of fig 1 and 2).

With respect to claims 3, Echizen et al., teaches the method, (as shown in fig 1) wherein the respective target for each data block (block interval of fig 4A) is selected from a predetermined set of gray scale levels (col.3, lines 50-55) as a one of said set of gray scale levels to which the average value of the pixel data in the data block is closest, (a pixel data block shown of in fig 11, is 8x8 pixels).

With respect to claims 4, Echizen et al., teaches the method, (as shown in fig 2) wherein the pixel data adjusted at step corresponds to pixels at a center of the region of the image to which the data block corresponds (see description of fig 2).

With respect to claims 5, Echizen et al., teaches the method, (as shown in fig 1 and 2) wherein each of the data blocks (data block as shown in fig 2) corresponds to a respective discrete region of the image (col.3, lines 50-55).

With respect to claims 6, Echizen et al., teaches the method, wherein the regions are rectangular (macro block of pixels, shown in fig 11, are rectangular).

With respect to claims 7, Echizen et al., teaches the method, (as shown fig 2) wherein the regions are square (col.4, lines 45-50).

With respect to claims 8, Echizen et al., teaches the method, (fig 2) further comprising: printing a printed image on the basis of the image data after adjustment according to step (see description of fig 9).

With respect to claims 9, Echizen et al., teaches the method, (as shown in fig 2) wherein the image data is subjected to a transformation that is performed after step and before step (see step 901-905 of fig 9).

With respect to claims 10, Echizen et al., teaches the method, (as shown in fig 2) wherein step is completed with respect to a particular one of the data blocks (data block 2 of fig 3) when the average value of the pixel data in the particular one of the data blocks substantially equals the respective target for the particular one of the data blocks (data block of fig 2).

With respect to claims 11, Echizen et al., teaches a method (as shown in fig 2) of determining whether a printed-image-under-examination (PIUE) is a copy of an original printed image, (image of fig 1, provides block image data divided from image of fig 1) the method comprising: scanning the PIUE to generate scanned image data, the scanned image data comprising pixel data, the pixel data comprising gray scale values and representing the PIUE as a set of scanning pixels (image of pixels block (k x n, pixels represent color (RGB) including gray scale, col.4, lines 49-55); forming a plurality of data blocks from the scanned image data, each data block consisting of pixel data which corresponds to a respective region of the PIUE (as shown in image 1 of fig 1, plurality of data blocks [block interval] as seen fig 1, col.4, lines 49-55); determining for each of the data blocks an average value of the pixel data in the data block (as shown in step 203 of fig 2, a determination has been obtained for all the block patterns of 64 types, col.4, lines 46-50); determining for each of the data blocks an index value based on the average value of the pixel data in the data bloc, (block (change of sum of pixel values col.4, lines 43-52), for each data block, calculating a difference between the

index value for the data block and a value that represents a target value for a corresponding block of pixel data that was used to generate the original printed image, (calculating block pattern shift 901 of fig 9, calculates shift amount is calculated, col.6, lines 65 through col.7, lines 1-5)

With respect to claims 12, Echizen et al., teaches the method, (as shown in fig 2) wherein the index value for each data block (data block of fig 2) is selected from a predetermined set of gray scale levels as a one of said set of gray scale levels to which the average value of the pixel data in the data block is closest, (image of pixels block (k x n, pixels represent color (RGB) including gray scale, col.4, lines 49-55);

With respect to claims 13, Echizen et al., teaches the method, (as shown in fig 2) further comprising: squaring the differences calculated in step (calculating pattern in step 901 of fig 9)

With respect to claims 14, Echizen et al., teaches the method, (as shown in fig 2) further comprising: (g) summing the squared differences (from step 901 through 906 of fig 9).

With respect to claims 15, Echizen et al., teaches the method, (as shown in fig 2) further comprising: comparing a sum generated at step with a threshold, (a calculations performed in step 901 of fig 9,where a value of water mark is determined).

With respect to claims 16, Echizen et al., teaches the method (fig 1 and 2), further comprising: providing an indication as to whether the PIUE is an original printed image on the basis of a result of step (output unit 511 of fig 5B, could be a printer).

With respect to claims 17, Echizen et al., teaches the method (as shown in fig 1 and 2) wherein the PIUE was printed with a first resolution that is less than a second resolution at which the PIUE was scanned in step (step 901 through 906 fig 9).

With respect to claims 18, Echizen et al., teaches a method (as shown in fig 2) of determining whether a printed-image-under-examination (PIUE) is a copy of an original printed image, (image of fig 1, provides block image data divided from image of fig 1) the method comprising: scanning the PIUE to generate scanned image data, the scanned image data comprising pixel data, the pixel data comprising gray scale values and representing the PIUE as a set of scanning pixels (image of pixels block (k x n, pixels represent color (RGB) including gray scale, col.4, lines 49-55); forming a plurality of data blocks from the scanned image data, each data block consisting of pixel data which corresponds to a respective region of the PIUE (as shown in image 1 of fig 1, plurality of data blocks [block interval] as seen fig 1, col.4, lines 49-55); determining for each of the data blocks an average value of the pixel data in the data block (as shown in step 203 of fig 2, a determination has been obtained for all the block patterns of 64 types, col.4, lines 46-50); determining for each of the data blocks an index value based

on the average value of the pixel data in the data bloc, (block (change of sum of pixel values col.4, lines 43-52), for each data block, calculating a difference between the index value for the data block and a value that represents a target value for a corresponding block of pixel data that was used to generate the original printed image, (calculating block pattern shift 901 of fig 9, calculates shift amount is calculated, col.6, lines 65 through col.7, lines 1-5).

With respect to claims 19, Echizen et al., teaches the method, (as shown in fig 2) further comprising: squaring the differences calculated in step (calculating pattern in step 901 of fig 9).

With respect to claims 20, Echizen et al., teaches the method, (as shown in fig 2) further comprising: (g) summing the squared differences (from step 901 through 906 of fig 9).

With respect to claims 21, Echizen et al., teaches the method, (as shown in fig 2) further comprising: comparing a sum generated at step with a threshold, (a calculations performed in step 901 of fig 9,where a value of water mark is determined).

With respect to claims 22, Echizen et al., teaches the method (fig 1 and 2), further comprising: providing an indication as to whether the PIUE is an original printed image on the basis of a result of step (output unit 511 of fig 5B, could be a printer).

With respect to claims 23, Echizen et al., teaches the method (as shown in fig 1 and 2) wherein the PIUE was printed with a first resolution that is less than a second resolution at which the PIUE was scanned in step (step 901 through 906 fig 9).

With respect to claims 24, Echizen et al., teaches the method, (as shown in fig 2) wherein the expected value of the index value for each of the data blocks (block data, shown in fig 2) is representative of a target value that was used to generate pixel values for a corresponding pixel block of the original printed image (from data block of fig 2, generate a pixel for further processing of the image).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Negussie Worku whose telephone number is 571-272-7472. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on 571-272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

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NW
09/23/09

AUNG S. MOE
SUPERVISORY PATENT EXAMINER
10/1/07